

## ICTS Colloquium

- Title : Cloaking strategies for transient heat and mass transfer
- Speaker : Harsha Hutridurga, Imperial College London, UK
- Date : Tuesday, May 23, 2017
- Time : 11:00 AM
- Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore
- Abstract : This talk aims to address the following question: Is it possible to surround a region in space by certain “exotic” material so that for an external observer, the temperature field is the same as that of an uniformly conducting medium regardless of the conductivity properties of an arbitrary material that can be placed in the said region? This talk will report on some recent results on near-cloaking strategies for time-dependent temperature or density fields. Our approach is to employ change-of-variables based cloaking schemes and to use some elementary spectral methods to analyse differential equations. Our method of proof also uses a result from the 80’s concerning the effect of small inhomogeneities in uniformly conducting media on certain boundary measurements. This is a joint work with Richard Craster, Sebastien Guenneau and Greg Pavliotis.